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**BOTANICAL NOTES.**—Dr. Sternberg has seen “prehensile filaments” of protoplasm in a species of *Navicula*, and is thus able to confirm Dr. Wallich's views as to the motions of diatoms. In a letter to the *American Monthly Microscopical Journal* he says: “I have seen them frequently in certain diatoms [*Navicula*] found in abundance in the gutters of New Orleans.” He used a 2-5 per cent. solution of iodine for suddenly killing and staining the filaments.—It is announced in English journals that B. D. Jackson, Secretary of the Linnean Society, will shortly bring out a new edition of Steudel's *Nomenclator Botanicus*.—Dr. Thurber is to publish a new edition of “American Weeds and Useful Plants,” and asks for notes upon new weeds, directing attention especially to the aggressive grasses. Specimens are desired, and should be sent to 751 Broadway, New York.—S. E. Cassino, of Boston, announces for publication, at an early date, “A Manual of the Mosses of the United States,” by Leo Lesquereux and Thomas P. James. It will contain nine or ten copper-plates illustrating the genera.—The same publisher announces also a “Manual of the Lichens,” by Professor Tuckerman.—A. H. Curtiss' Fascicle v. of his southern plants is one of the most interesting yet sent out by him. Several of the specimens represent new species, some of which are curious. Some are new to our flora, as *Catesbæa parviflora*, a remarkable shrub from Southern Florida. This year (1882) Mr. Curtiss intends to spend in collecting in the Smoky mountains of East Tennessee.—M. E. Jones, of Salt Lake City, has recently sent out his catalogue of specimens of California Plants, to be issued in fascicles. Many interesting species are represented, and this, with the low price (\$30 per fascicle of 500 species), will make these sets very desirable.

#### ZOOLOGY.

**NESTING HABITS OF THE HORNED LARK.**—In the November number of the *NATURALIST*, Mr. Aldrich, of Webster City, Iowa, notices the finding of a bird's nest with eggs, near the Agricultural College, on the last day of March, which he ascribes to the snow-bunting (*Plectrophanes nivalis*). In this he must be mistaken, as no bird of that species probably ever nested within a thousand miles of Iowa. There are, I believe, only two records of its breeding in the United States, and both of those were in New England. The bird to whom the nest that he discovered really belonged, was probably the horned lark (*Eremophila alpestris*). This bird habitually winters in Iowa in great numbers, and many remain to breed, which they always do very early in the season, with little apparent regard to temperature. Professor Arthur, of Charles City, Iowa, tells me that he has seen the snow blowing over the nest and mother-bird when the weather was as severe as mid-winter. Some specimens that I shot in February and dissected, showed by the condition of the sexual organs, that the breeding

season was at hand, in fact they were evidently mating when killed. I will add that a short time after Mr. Aldrich's visit I obtained for the college museum a nest with eggs from that same "little knoll" of which he speaks, while another nest was found with young, which was very likely the one that he saw, which may satisfy him that the bird had made no mistake.—*F. E. L. Beal, Ag. College, Ames, Iowa.*

NOTES ON SOME FRESH-WATER CRUSTACEA, TOGETHER WITH DESCRIPTIONS OF TWO NEW SPECIES (*Continued*).—*Crangonyx gracilis* Smith. — (*C. gracilis* Smith S. I., Crustacea of the Fresh-waters of the U. S., Report U. S. Fish Commission for 1872-3, 654; S. A. Forbes, Bulletin Illinois Museum Nat. Hist., No. 1, 6.) Numerous specimens of the Western variety of this species were obtained in the ponds and slow streams around Irvington during the winter and early spring of 1879-80. They differ in no appreciable way from specimens of the same species obtained at various localities in Illinois.

*Crangonyx mucronatus* Forbes.—(*C. mucronatus* Forbes, S. A., Bull. Ills. Mus. Nat. Hist., No. 1, 6.) Two males of this curious species were obtained from a well in Irvington during the latter part of the year 1879. On the anterior edge of the sternal portion of each of the last two thoracic segments, I have observed two appendages, no mention of which is made in the original description cited above. They call to mind the appendages mentioned by Prof. S. I. Smith (op. cit. 647) as occurring on some of the anterior segments of *Pontoporeia hoyi*. In form these appendages are elongated, oval, and pointed. They are as long as the branchial sacs, or longer, and seem to be corneous. They may occur on the sternal portion of other of the thoracic segments; but in the very few specimens that I have had the opportunity to examine, I have not observed this.

*Asellus communis* Say.—(*A. communis* Smith, S. I., op. cit. 657 *A. militaris* Hay, O. P., Bulletin Ills. Mus. Nat. Hist., No. 2, 90.) This species is very common in the streams about Irvington, during the early months of spring. I am now pretty well convinced that the form that I described as cited above is the same as the Eastern species. It differs certainly from Eastern specimens in the armature of the hand, in the form of the genital plates, in size, and in some other respects; but I do not believe that these characters are sufficiently marked and constant to enable us to found species on them. The specimens obtained at Irvington differ in the details of the hand and genital plates from all others that I have seen; but these differences are accompanied by no others of importance. As I now recognize this species, it extends in its distribution from Massachusetts and Connecticut on the east to the Mississippi on the west, and to Central Mississippi on the south. About the middle of August of the present year I

was at Jackson, Miss., collecting fishes and, incidentally, other animals. While engaged in searching in the mud and among the fallen leaves in a pool formed by a spring along the Pearl river, I found some specimens that prove to belong to *Asellus communis*. The individuals are all of small size, none exceeding about 7<sup>mm</sup> in length. That they are mature, however, is shown by the fact that several of the females bear numerous eggs beneath their oostegites. They appear almost as pigmies beside the Illinois variety, *militaris*. The discovery of these specimens in this locality shows that this species has a very wide geographical distribution.

*Mancasellus tenax* Harger.—(*Asellus tenax* Smith, S. I., Amer. Jour. Sci., 1871, 453. *Asellopsis tenax* Smith, S. I., Fresh-water Crustacea U. S. 659. *Mancasellus tenax* Harger, Amer. Jour. Sci., 1876, 304.) Along with the species of *Asellus* mentioned above as occurring in the neighborhood of Irvington, and in equal abundance, is found *Mancasellus tenax*. It was originally described from specimens obtained about the great lakes of Michigan, and I am not aware that it has hitherto been noticed anywhere else. The specimens that I have collected here apparently belong to Mr. Harger's variety *dilata*; but are in some respects different both from this variety and from the typical forms. The flagellum of the antennæ may have as many as forty-five segments. The propodite of the first thoracic foot is oval, swollen, and armed with three teeth, being in these features like *dilata*, but differing in that the larger tooth is the one at the posterior angle, instead of the middle one. This largest tooth is fully one-third as long as the dactyl. There is a prominent lobe or tooth on the concave side of the dactyl, about the middle of its length. On the outer surface of the mandible I have observed a small tubercle, situated apparently in a slight depression and armed with a hair. This I have been inclined to regard as a rudiment of the mandibular palpus.

*Eubbranchipus vernalis* Verrill.—(*Eubbranchipus vernalis* Verrill, A. E. ——— Packard, A. S., Jr., Hayden's Rep. Geolog. and Geog. Sur., 1874, 622.) Large numbers of this crustacean, so interesting on account of its curious form and structure, its habits, its beautiful colors, and its graceful movements, were taken from ponds in Irvington, during the winter of 1879–80. During this period the weather was unusually mild, and the waters remained unfrozen during the greater part of the season. About the first of December I caught a single specimen of what was evidently an *Eubbranchipus*. It was but partially developed, and I supposed that it would turn out to be *E. serratus* Forbes. On the 10th of January I collected several full grown specimens of the same animal in the same pond, and a careful examination showed that they belonged to Professor Verrill's *E. vernalis*. The ponds in which I have taken specimens here are, some of them

at least, dried up every summer. Not many individuals could be captured by merely sweeping the net through the water; but when it was used to stir up the soft mud at the bottom, they could be taken in great numbers. In the March number of Vol. XII. of the AMERICAN NATURALIST occurs a note by Professor A. S. Packard, Jr., stating that this species had been captured at Danvers, Mass., Jan. 10, 1878, and had been seen even earlier. So far as I am aware, no one has hitherto reported this species as having been observed outside of Massachusetts and Connecticut.—O. P. Hay, Irvington, Ind.

ALBINISM IN A CRUSTACEAN.—To-day I found under a log an albino specimen of *Porcellio*. It was of a uniform yellowish white color, and was among other sow-bugs of the ordinary gray and brown colors. It is the only one I have ever seen.—Henry Ward Turner, Ithaca, New York, Dec. 18th, 1881.

May 23, 1881.

LONGEVITY OF THE TURTLE.—Enclosed I send you a slip cut from "*The Clayton Independent*," published at Clayton, N. Y., Sep. 8th, 1881. The article was copied by some of the local papers in that vicinity, viz: "*Watertown Times*," and "*Watertown Reformer*." For the truth of these statements I can vouch so far as the matter concerns myself. A. D. Percy is a brother-in-law of mine and a gentleman to be relied upon. At the second capture the first markings were not very distinct, but sufficiently so to be easily read. Very truly yours,

C. D. ABBEY,

*Principal of the High School, Wausau, Wisconsin.*

"In 1864 C. D. Abbey found a large mud turtle on his father's farm, and cut his name and the date on the shell and then put it into the river. In 1874 he found the same turtle near the same place and again cut his name and date in the shell and then released it. Last Friday the same turtle made its appearance, and A. D. Percy cut his name on the back, and placed it in the river, when it started directly for Canada, evidently displeased with such treatment."

HABITS OF THE BORING SPONGE.—N. Nassonon finds, states the Journal of the Royal Microscopical Society, that the *Clione* lives on the shells of living oysters as well as on empty shells. They give off from the surface very delicate pseudopodia-like processes, which pass in all directions into the substance of the shell; these processes may branch, and even anastomose with one another. The author, by placing in the aquarium fine transparent lamellæ of oyster shells, saw the young *Clione* push its processes into the calcareous lamellæ; when they had reached a certain depth they united with one another and forced out hemispherical calcareous particles; these were by contraction carried into the interior of the body, and then cast to the exterior. The ectoderm is reported to

consist of flat, colorless epithelial cells, with processes by means of which the cells are connected together; the mesoderm is formed by a mass of layers of oval, yellow cells.

COLOR SENSE IN CRUSTACEA.—M. Paul Bert has made some interesting experiments on a small fresh water crustacean belonging to the genus *Daphnia*, from which he concludes that they perceive all the colors known to us, being, however, specially sensitive to the yellow and green, and that their limits of vision are the same as ours; but Sir John Lubbock, says the *Journal of the Royal Microscopical Society*, as the results of his own experiments with *Daphnia* under different parts of the spectrum, considers that the limits of vision of *Daphnia* do not, at the violet end, of the spectrum, coincide with ours, but that, like the ant, it is affected by the ultra-violet rays.

HAIRS OF THE ANTERIOR ANTENNÆ OF CRUSTACEA.—S. Jourdain, after a few words on the auditory hairs of this group, proceeds to point out the arrangement and structure of the processes found on these antennules, which were regarded by Leydig as having an olfactory function. Before describing the arrangements which obtain in the representatives of different orders, he says that in all cases we find a very delicate chitinous sheath, which is penetrated by an offshoot from the hypodermic layer, and which at its base is found to be in relation with a branch of the antennary nerve; the free end is truncated and carries a hyaline body, which appears to be comparable to the rods found at the sensory ends of sensory organs. These may be known as the "poils à bâtonnet." The hairs are cylindrical in some cases, and then the chitinous cylindrical sheath is made up of a number of joints; the basal ones have thicker walls and are shorter than those which are more distal. In other cases the hairs are *stipitate*, and then the joints are ordinarily reduced to three, and the basal one, which is of some length, is constricted in its middle. A detailed study shows that the former arrangement is confined to the Podophthalmate crustacea; the hairs are found in the young, though in less number than in the adult; and, similarly, they are more numerous in the higher than in the lower forms. Although there seems to be no doubt that these organs respond to stimuli which are something else than tactile, we are not yet in a position to definitely assert that they have an olfactory function. The author concludes by remarking that the characters of these parts have a value for the systematist.—*Journal of the Royal Microscopical Society*.

BYTHINIA TENTACULATA.—My friend, Mr. Henry Prime, has just called my attention to an error in *THE NATURALIST* for September, 1881 (p. 716), in introduced species of shells. Instead of W. H. Ballou, it should have been W. M. Beauchamp, as in the notice to which reference was made.

Permit me to make a little fuller statement about this shell. I met with it in great numbers at Oswego in June, 1879, and finding no description of an American shell corresponding to it, referred the matter to Dr. James Lewis, who was equally puzzled with myself until he saw the shell. He at once pronounced it a *Bythinia*, the first he had known in this country, and thought it *B. tentaculata* Linn., but, as it varied locally, he was not sure but it might prove a new and native species. Mr. Tryon at once pronounced it *B. tentaculata*, but it is interesting for comparison with the European shell.

Dr. Lewis had successfully colonized Western mollusks in the Mohawk river and Erie canal, and I sent him several hundreds of this species for that purpose. How they have thriven I do not know. I put some in the Seneca river, but have seen none of them since, and think they require still waters. In the Erie canal at Syracuse, west of the Oswego canal only, there are a good many. At Oswego they adhere to the wooden piers and stones near the mouth of the river, and I found them nowhere else there.

Soon after these shells were brought to Dr. Lewis' notice he showed some of them to Mr. Charles E. Beecher, of the New York State Cabinet, and found that he had frequently observed them in the canals near Albany, but had mistaken them for another native shell. Mr. B. certainly saw them before I did, though I happened to report them first. Dr. Lewis thought this species would spread rapidly, and it seems inclined to follow the canals, but not the streams. In ponds it would probably increase fast. Although it must have reached Oswego and Troy by way of the St. Lawrence, I am unable to learn of its presence on that river, or in Lake Champlain.—*W. M. Beauchamp.*

ZOOLOGICAL NOTES.—The species of orangs, which have been placed at from one to four, have been examined by Mr. F. O. Lucas, of Professor Ward's establishment, who reports in the Proceedings of the Boston Society of Natural History that all four forms must be referred to one.—Professor Ward has returned from a collecting journey to New Zealand and Australia with a large collection of marsupials, *Ornithorhynchus*, specimens of *Echidna* from New Guinea, and of *Hatteria* from New Zealand. His account of the habits of the latter very rare lizard, given in Ward's Natural Science Bulletin for January 1, is well worth reading.—The mollusca of H. M. S. *Challenger* are being described in the Journal of the Linnæan Society, London, in a series of papers, by Rev. R. B. Watson, of which we have thus far received eight parts. The deep sea mollusks of the Gulf of Mexico and the Caribbean sea obtained by the U. S. Coast Survey steamer *Blake* have been described by Mr. W. H. Dall in Bulletin No. 11, Vol. ix, of the Museum of Comparative Zoölogy, at Cambridge, Mass. The collections made by the *Blake* in one winter

(1877-78) is very rich, containing perhaps three times as many species as the results of the whole three years' voyage of the *Challenger*.

ENTOMOLOGY.<sup>1</sup>

## LIST OF NORTH AMERICAN CYNIPIDÆ.

- |                                 |                                     |
|---------------------------------|-------------------------------------|
| Genus 4. RHODITES Hartig.       | sub. gen. CALLIRHYTIS Forst.        |
| <i>verna</i> O. S.              | <i>similis</i> B.                   |
| <i>radicum</i> O. S.            | <i>fulvifolia</i> O. S.             |
| <i>bicolor</i> Harris.          | <i>tumefacta</i> O. S.              |
| <i>dichlocans</i> Harris.       | <i>scitula</i> B.                   |
| Genus 9. PERICLISTIS Forst      | <i>clavula</i> B.                   |
| <i>sylvestris</i> O. S.         | <i>operator</i> O. S.               |
| = <i>Aulax sylvestris</i> O. S. | <i>palustris</i> O. S.?             |
| <i>pirata</i> O. S.             | Genus 18. CYNIPS (L) Hertig.        |
| = <i>Aulax pirata</i> O. S.     | <i>strobilana</i> O. S.             |
| Genus 12. SYNERGUS Hartig.      | Genus 20. ACRASPIS Mayr, nov. gen.  |
| <i>lignicola</i> O. S.          | <i>pezomachoides</i> O. S.          |
| Genus 15. DIASTROPHUS Hartig.   | <i>erinacei</i> Walsh.              |
| <i>nebulosus</i> O. S.          | Genus 22. BIORHIZA Westwood.        |
| <i>radicum</i> Bass.            | <i>forticornis</i> Walsh.           |
| <i>cuscutæformis</i> O. S.      | Genus 25. LOXAULIS Mayr, nov. gen.  |
| <i>potentillæ</i> Bass.         | <i>mammula</i> B.                   |
| Genus 17. ANDRICUS Hartig.      | Genus 27. HOLCASPIS Mayr, nov. gen. |
| <i>singularis</i> B.            | <i>globulus</i> Fitch               |
| <i>Osten-Sackenii</i> B.        | <i>duricoria</i> B.                 |
| <i>ignotus</i> B.               | <i>rugosa</i> B.                    |
| <i>californicus</i> B.          | Genus 28. DRYOPHANTA Forst.         |
| <i>concinus</i> B.              | <i>gemula</i> B.                    |
| <i>capsula</i> B.               | <i>nubila</i> B.                    |
| <i>acinosus</i> B.              | <i>bella</i> B.                     |
| <i>petiolicola</i> B.           | <i>polita</i> B.?                   |
| <i>floci</i> Walsh.             | Genus 29. NEUROTERUS Hartig.        |
| <i>tubicola</i> O. S.           | <i>batatus</i> B.                   |
| sub. gen. CALLIRHYTIS Forst.    | <i>noxiosus</i> B.                  |
| <i>agrifolia</i> B.             | <i>vesicula</i> B.                  |
| <i>cornigera</i> O. S.          | <i>majalis</i> B.                   |
| <i>Suttoni</i> B.               | <i>minutus</i> B.                   |
| <i>punctata</i> B.              | <i>flocosus</i> B.                  |
| <i>seminator</i> H.             | <i>Rileyi</i> B.                    |

BIBLIOGRAPHY OF GALL LITERATURE.—The study of galls belongs to the domain of entomology as well as botany, and no one is more capable of reviewing the literature on the subject than Dr. Fr. Thomas, of Ohrdruf (Germany). Dr. Thomas has for some years past prepared the chapter, "Durch Thiere erzeugte Pflanzengallen" (Galls produced on plants by animals) of the Botanischer Jahresbericht, and we have just received his report from Vol. VII of that periodical. This latest record comprises the literature of the year 1879, including a few publications of the year 1878, not mentioned in the Jahresbericht for 1878, and is arranged as in the previous volumes; the titles are first given alphabetically by authors, a key to the subjects treated

<sup>1</sup> This department is edited by PROF. C. V. RILEY, Washington, D. C., to whom communications, books for notice, etc., should be sent.